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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/047,064

01/15/2002

Robert John Kopmeiners

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08/18/2005

Docket Administrator

Agere Systems Inc.

P.O. Box 614

Berkeley Heights, NJ 07922-0614

EXAMINER

AGHDAM, FRESHTEH N

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,064

Applicant(s)

KOPMEINERS ET AL.

Examiner

Freshteh N. Aghdam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

In response to applicant's arguments, the objections of claims 1, 4, and 6 and the rejections of claims 1-6 under U.S.C. 112 have been withdrawn. Applicant's arguments filed 6/13/2005 have been fully considered but they are not persuasive.

Applicant's Argument: In page 6, lines 17-31 and page 7, lines 1-3, applicant argues Suzuki does not disclose or suggest "a predetermined set of symbols; therefore, Suzuki does not disclose or suggest generating a set of reference symbols on the basis of the predetermined set of symbols and a channel impulse response and does not disclose or suggest comparing each of the successive parts of the received signal, each part having the length of a symbol, with each of the reference symbols, yielding a detected symbol for each part of the received signal.

Examiner's Response: Suzuki teaches generating a set of reference symbols (i.e. Fig. 6, output of means 221) on the basis of the predetermined set of symbols (pilot symbol pattern to be originally transmitted) and the channel estimating means 231 to 23K comparing each of the successive parts of the received signal, each part having the length of a symbol with reference symbols through correlating means 241-24K yielding detected symbols $i1-ik$ (Fig. 6; Col. 5, Lines 51-60).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al (US Patent 6,763,059).

As to claim 1, Suzuki teaches a detection method in a receiver of a digital communication system using a BPSK modulation method wherein a set of reference symbols (i.e. Fig. 6, output of means 221) are generated on the basis of the predetermined set of symbols (pilot symbol pattern to be originally transmitted) and the channel estimating means 231 to 23K, wherein each of the successive parts of the received signal, each part having the length of a symbol, are compared with reference symbols through correlating means 241-24K yielding detected symbols i1-ik (Fig. 6; Col. 5, Lines 51-60).

As to claim 2, Suzuki teaches a step of generating a correction signal (Fig. 5, output of means 251-25k) on the basis of the detected symbols i1 to ik and corresponding channel estimating values g1 to gk on the basis of the detected symbols being convolved with the channel estimating values wherein the correction signal being subtracted (Fig. 6, means 261) from the received signal prior to symbol detection for

suppressing the Inter-Symbol Interference effect (i.e. ISI effect) (Fig. 7; Col. 6, Lines 6-19; Col. 2, Lines 15-19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bar-David et al (US Patent 5,623,511) and further in view of Suzuki et al.

As to claim 4, Bar-David et al teach a detection method in a receiver of a digital communication system using a PSK modulation method wherein the received signal is filtered by a filter signal wherein the filter is a matched filter 650 and 660 to the channel impulse response between the transmitter and the receiver wherein each of the successive parts of the filter signal having the length of a symbol (Fig. 6; Col. 12, Lines 15-31). Bar-David et al is silent about each part of the filter signal being compared to each of the symbols from the predetermined set of symbols yielding a detected symbol for each part of the filter signal. Suzuki, in the same field of endeavor, teaches the received symbols are compared with predetermined symbols through correlating means 211-21K and 241-24K (Fig. 6; Col. 5, Lines 51-58). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Suzuki et al with

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Bar-David et al in order to collect the appropriate energy into each sample (Col. 11, Lines 10-12).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bar-David et al and Suzuki et al, further in view of Dabak et al (US Pub. 2004/0101032).

As to claim 5, Bar-David et al and Suzuki et al teach all the subject matters cited in claim 4. Suzuki et al teach a correction signal generated based on the detected symbol. Suzuki et al is silent about the correction signal being subtracted from the part of filter signal, which succeeds the part of the filter signal corresponding to the detected symbol for suppressing the ISI effect. Dabak et al, in the same field of endeavor, teach a parallel interference cancellation circuit (Fig. 8; Pg. 5, Par. 46) wherein the result of the symbol decision block 818 is subtracted from the output of the matched filter 800 (i.e. the correction signal being subtracted from the part of filter signal, which succeeds the part of the filter signal corresponding to the detected symbol).

Allowable Subject Matter

Claims 3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims and 6, the prior art of record fails to teach a correlation value is corrected with half the energy of the reference symbol.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Freshteh Aghdam

August 15, 2005


KEVIN BURD
PRIMARY EXAMINER